

M A N U A L

OF

Popular Instructions,

FOR RECOVERING PERSONS APPARENTLY DEAD FROM

DROWNING,
SUFFOCATION,
LIGHTNING,
SWOONINGS,
INTENSE COLD,

INTOXICATION,
HANGING,
SMOTHERING,
FALLS,
BLOWS, &c.

AND ON THE

Cure and Proper Treatment

IN CASES OF

Poison,
Hydrophobia,
Convulsions,
Apoplexy,

Palsy,
Colic,
Contagious Dis-
eases,

Burns,
Wounds,
Bruises,
Sprains, &c.

TO WHICH ARE ADDED,

REMARKS ON THE ACCIDENTS INCIDENT TO CHILDREN,

AND

CAUTIONS, HINTS, &c.

To Persons exposed to the Accidents and Diseases for the Pre-
vention and Cure of which this Tract is designed.

Drawn up under the Sanction, and with the Assistance of
Dr. HAWES, Institutor and Treasurer of the
Royal Humane Society, London.

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TO

DR. HAWES,

By whose unremitting zeal and exertions,
the Means of Recovery from a State of Sus-
pended Animation, have been so successfully
employed,

THIS TRACT

Is most respectfully Inscribed.

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MANUAL, &c.

Of apparent Death from Drowning, and the Means to be employed for Recovery.

- “ While the vital fire
“ Burns feebly, heap not the green fuel on:
“ But prudently foment the wandering spark,
“ With what the soonest feels its kindred touch;
“ Be frugal ev’n of that; a little give
“ At first, that kindled, add a little more,
“ Till, by deliberate nourishing, the flame
“ Reviv’d, with all its wonted vigour glows.”

ARMSTRONG’S ART OF PRESERVING HEALTH.

FROM considering that a drowning person is surrounded by water instead of air, and that in this situation he makes strong and repeated efforts to breathe, we should expect that the water would enter and completely fill the lungs. This opinion, indeed, was once very general, and it still continues to prevail among the common people. Experience, however, has shewn, that unless the body lies so long in the water, as to have its living principle entirely destroyed, the quantity of fluid present in the lungs is inconsiderable. In the efforts made by a drowning person, to draw in air, the water rushes into the mouth and throat, and is applied to these muscles, which immediately contract in such a manner as to shut up the passage into the lungs. This contracted state continues as long as the muscles retain the principle of life, upon which the power of muscular contraction depends; when that is gone, they become

relaxed, and the water enters the wind-pipe and completely fills it.

When a body has lain in the water for some time, the skin will appear livid, the eyes bloodshot, and the countenance bloated and swollen; but these appearances, though certainly unfavourable, do not absolutely prove that life is irrecoverably gone.

In the case of drowning, no injury is done to any of the parts essential to life; but the right cavity of the heart, together with the veins and arteries leading to and from that cavity, are turgid with blood, whilst every other part is almost drained of it.

From this we see, that the practice of holding up the bodies of drowned persons by the heels, or rolling them about in a cask, is unnecessary; the lungs not being filled with any thing that can be discharged in this way. And farther, that such a practice is highly dangerous, as the violence attending it, may readily burst some of those vessels which are already overcharged with blood, and thus convert what was only suspended animation, into absolute death.

The operation of blowing wind into the lungs, is a perfectly safe, and much more effectual method of removing any frothy matter they may contain; and whilst it promotes the passage of the blood through them, also renders it capable of stimulating the *left* cavity of the heart, and exciting it to contraction.

As soon therefore as the body is taken out of the water, it should be stripped of any clothes it may have on, and be immediately well dried. It should then be wrapped in dry warm blankets, or in the spare clothes taken from some of the by standers, and be removed as quickly as possible to the nearest house that can be got convenient for the purpose: the fittest will be one that has a tolerably large apartment, in which a fire is ready, or can be made; but, if the weather happen to be warm, and the sun to shine in the room strongly, the body may be laid on some dry clothes, and exposed to the sun's rays, to restore its heat, while the windows should be kept open.

The body may be carried in men's arms, or laid upon a door; or, in case the house be at a distance from the place, if a cart can be procured, let the body be placed in it, on

one side, upon some straw, with the head and upper parts somewhat raised; and in this position, a brisk motion will do no harm.—Whatever be the mode of carrying it, particular care should be taken, that the head be neither suffered to hang backwards, nor to bend down with the chin upon the breast.

When arrived at the house, lay the body on a mattress, or a doubled blanket, spread upon a low table, or upon a door supported by stools; the head and chest being elevated by pillows.

As the air of a room is very soon rendered impure by a number of people breathing in it, for this reason, as well as to avoid the confusion attending a crowd, no more persons should be admitted into the apartment where the body is placed, than are necessary to assist immediately in the recovery: in general, *six* will be found sufficient for this purpose, and these should be the most active and intelligent of the by-standers.

It will be found most convenient to divide the assistants into two sets, one set being employed in restoring the heat of the body, while the other begins an artificial breathing in the following manner.

An assistant taking his station at the head of the drowned body, is to introduce the small end of a hollow piece of wood, or its place may be tolerably well supplied by means of a card, or a piece of stiff paper or leather, rolled up in the shape of a funnel, and tied with a piece of twine or strong thread, into either of the nostrils, and keep it fast there with the right hand, whilst, with the left, he carefully closes up the other nostril and mouth. A *second* assistant placed on the *left* side of the body, must now endeavour to blow wind into the lungs, by putting in the pipe of a pair of common bellows; and if no bellows can be got, an assistant should try to inflate the lungs by blowing into the nostril through a reed, quill, or other small pipe, with his breath, into the wide end of the wooden tube before-mentioned, with sufficient force to raise the chest. To prevent any air from passing down the gullet, and so getting into the stomach, a *third* assistant, stationed on the *right* side of the body, should press the upper part of the wind-pipe gently backwards, with his *left* hand, keeping his *right* hand lightly spread out upon the breast. As soon as the lungs are filled with air, the *first* assistant is to

unstop the mouth, and the third to expel the air again, by pressing moderately on the breast. The same operation is to be repeated in a regular and steady manner, until natural breathing begins, or until this, and the other means have been persisted in for at least *six hours*, without any appearance of returning life.

Very often the first attempts to inflate the lungs in this way, do not succeed. When that is the case, let an assistant, by means of his finger introduced into the throat, depress and draw forwards the tongue, and then, with a piece of sponge, or a corner of a towel, remove any frothy matter that may be lodged about the upper part of the wind pipe; while one set of the assistants is thus engaged in performing artificial respiration, the other should be employed in communicating heat to the body.—The warm bath has been usually recommended for this purpose; but, wrapping the body in blankets, or woollen cloths, strongly wrung out of warm water, and renewing them as they grow cool, besides being a speedier and more practicable method of imparting heat, has this great advantage, that it admits of the operation of inflating the lungs being carried on without interruption.

Until a sufficient quantity of warm water can be got ready, other methods of restoring warmth may be employed; such as the application of dry warm blankets round the body and limbs; bags of warm grains or sand, bladders or bottles of hot water, or hot bricks applied to the hands, feet, and under the arm-pits,—the bottles and bricks being covered with flannel: or the body may be placed before the fire, or in the sunshine, if strong at the time, and be gently rubbed by the assistants with their warm hands, or with cloths heated at the fire or by a warming pan.

The restoration of heat should always be gradual, and the warmth applied ought never to be greater than can be comfortably borne by the assistants. If the weather happen to be cold, and especially if the body has been exposed to it for some time, heat should be applied in a very low degree at first: and if the weather be extremely cold, and the body when stripped, feel cold and nearly in the same condition with one that is frozen, it will be necessary at first to rub it well with snow, or wash it with cold water; the sudden application of heat in such cases, having

been found very pernicious. In a short time, however, warmth must be gradually applied.

When there is reason to think that the skin has, in any degree recovered its sensibility, let an assistant moisten his hand with spirit of hartshorn, or *eau de luce*, and hold it closely applied to one part: in this way evaporation is prevented, and the full stimulant effect of the application obtained. An ointment composed of an equal quantity of spirit of hartshorn and sallad oil, well shaken together, would appear to be sufficiently stimulating for the purpose, and as it evaporates very slowly, will admit of being rubbed on without producing cold.—The places to which such remedies are usually applied, are, the wrists, ancles, temples, and the parts opposite the stomach and heart.

A glyster may now be applied, consisting of a mutchkin or more of water moderately warmed, with the addition of one or two table spoonfuls of spirit of hartshorn, a heaped tea spoonful of strong mustard, or a table spoonful of essence of pepperinint: in defect of one or other of these, half a gill or more, of rum, brandy, or gin, may be added, or the warm water given alone. This step, however, need not be taken, until artificial respiration has been begun;—for it will answer but little purpose to stimulate the heart through the medium of the intestines, unless we, at the same time, supply the left cavity with blood fitted to act upon it; which we cannot do without first removing the collapsed state of the lungs, and promoting the passage of the blood through them by a regular inflation.

As the stomach is a highly sensible part, and intimately connected with the heart and brain, the introduction of some moderately warm and stimulating liquor into it, seems well calculated to rouse the dormant powers of life. This can be very easily done by means of a syringe*. The quantity of fluid thrown in, ought not to exceed half a mutchkin, and may be either warm wine or water, with the addition of one or other of the stimulating matters recommended above—using, however, only half the quantities mentioned there.

As soon as the pulse or beating of the heart can be felt, the inside of the nostrils may be occasionally touched with

* Syringe, called by the lower classes in Scotland, a *Squirt* or *Scouter*.

a feather dipt in spirit of hartshorn, or sharp mustard; it being found by experience, that any irritation given to the nose, has considerable influence in exciting the action of the muscles concerned in respiration.

When the several means recommended above, have been steadily pursued for an hour or more, without any appearance of returning life, electricity should be tried; experience having shewn it to be one of the most powerful *stimuli* yet known, and capable of exciting contraction in the heart and other muscles of the body, after every other *stimulus* had ceased to produce the least effect. Moderate shocks are found to answer best, and these should, at intervals, be passed through the chest in different directions, in order, if possible, to rouse the heart to action. As soon as the shock is given, let the lungs be emptied of the air they contain, and filled again with fresh air; then pass another shock,—and repeat this until the heart is brought into action.

When the patient is so far recovered as to be able to swallow, he should be put into a warm bed, with his head and shoulders somewhat raised by means of pillows. Plenty of warm wine, whey, ale-posset, or other light and moderately nourishing drink, should now be given; and gentle sweating promoted, by wrapping the feet and legs in flannels well wrung out of hot water.

The patient should on no account be left alone, until the senses are perfectly restored, and he be able to assist himself; several persons having relapsed and been lost, from want of proper attention to them, after the vital functions were, to all appearance, completely established.

Either from the distension which the arteries of the lungs have suffered, or from the sudden change from great coldness to considerable warmth, it now and then happens, that the patient is attacked, soon after recovery, with inflammation of some of the parts within the chest. This occurrence is pointed out by pain in the breast or side, increased on inspiration, and accompanied with frequent, and full or hard pulse, and sometimes with cough. Here the taking away some blood from the arm, or the application of cupping-glasses, leeches, or a blister, over the seat of the pain will be very proper; but the necessity for these measures, as well as the time for putting them in practice, should be

left to the judgment and discretion of a medical person.—Dull pain in the head, lasting sometimes for two or three days, is by no means an unfrequent complaint in those who are recovered from this and from the other states of suspended animation, and here also a moderate bleeding from the neck, either with the lancet or with cupping-glasses, may prove serviceable.

The only circumstance which precludes the possibility of recovery, is such a degree of injury being done to the brain, heart, or lungs, as renders them incapable of having their proper functions again renewed. The importance of this conclusion cannot be too strongly enforced, and the most lively hope is entertained, that in thus endeavouring to impress it on the public, it may animate the humane and benevolent to use every exertion, and not to cease from employing the several means recommended, until many hours have elapsed; nor ever abandon a case, without a trial, unless indubitable marks of complete and permanent death evidently appear. In fact, under almost any circumstances, a recovery should be attempted, for let us ever hold in view the possibility, that the person “is not dead, but sleepeth;” and remember, that even an unsuccessful trial will afford us the heartfelt satisfaction of knowing that we have done our duty.

Apparent Death from Hanging, and the Means of Recovery.

IN hanging, the external veins of the neck are compressed by the cord, and the return of the blood from the head thereby impeded, from the moment that suspension takes place; but as the heart continues to act for a few seconds after the wind-pipe is closed, the blood which is sent to the head during this interval, is necessarily accumulated there. Hence it is, that in hanged persons the face is greatly swollen and of a dark red or purple colour; the eyes are commonly suffused with blood, enlarged, and prominent.

From the great accumulation of blood in the vessels of

the head, many have been of opinion, that hanging kills chiefly by inducing apoplexy; but it has, however, been clearly proven, that in hanging, as well as in drowning, the exclusion of air from the lungs is the immediate cause of death. From which it appears, that the same measures recommended for drowned persons, are also necessary here; with this addition, that opening the jugular veins, or applying cupping-glasses to the neck, will tend considerably to facilitate the restoration of life, by lessening the quantity of blood contained in the vessels of the head, and thereby taking off the pressure from the brain. Except in persons who are very full of blood, the quantity taken away need seldom exceed an ordinary tea cupful, which will, in general, be sufficient to unload the vessels of the head, without weakening the powers of life.

Suffocation by Noxious Vapours.

NOXIOUS vapours arise from various sources, as from all malt-liquors, during their state of fermentation—from lighted charcoal—and from brick and lime kilns whilst burning; they are also found to occupy deep vaults, sewers, pump-wells, wells of ships, coal-pits, mines, and other places that have not a free circulation of air.

When the accident is recent, and the body retains its heat, the application of cold water to the head, neck, breast, and other parts, has been found of great service in promoting recovery. For this purpose, the body should be stripped naked, and laid in the open air, upon a door or boards placed in a slanting position, so that the head and shoulders may be considerably elevated. The cold water is then to be dashed smartly and repeatedly upon different parts, and especially upon those mentioned above, until the temperature of the body be reduced to the natural standard, or until signs of life appear.

If the body, however, be under the natural temperature, then it will be necessary to apply heat.

In the mean time, the lungs should be diligently inflated, and the nostrils stimulated, as directed under the article *Drowning*.

Where the veins of the neck appear very turgid, some blood may be taken from them, either by the lancet or by cupping-glasses.

A violent pain in the stomach has sometimes taken place after recovery, and been removed by giving a brisk purgative or emetic, which evacuated a great quantity of bile.

When suffocation proceeds from the fumes of charcoal, a slight inconvenience is first perceived, followed by debility and insensibility; the pulse and respiration become slow, and at last death ensues.

If the person is only so much exposed to this vapour as to stagger, on coming into fresh air it goes off; but the head remains affected.—When they continue so long that the sleepiness comes on, they should be immediately bled, cold water thrown upon the head, &c. and stimulating applications to the feet. There are many instances of recovery by these means, even when respiration had ceased, and some part even of the animal heat has been lost. If life does not soon return, it will be highly proper to inflate the lungs, &c.

Apparent Death from Blows, Falls, and the Stroke of Lightning.

WHEN a person is deprived of sense and motion from any of these causes, and does not recover in the space of a few seconds, it is commonly supposed, although no marks of violence appear on the body, that so great a degree of injury has been done to some of the vital organs, as to render a recovery impossible. Such hasty conclusions, however, are extremely improper, as experience has repeatedly shewn them to be false in every one of these cases.

We frequently see persons stunned by falls or blows, continue in a seemingly lifeless state for several minutes, and yet recover without any particular assistance, notwithstanding

that they have sustained evident and considerable external injury.

In the instance of lightning indeed, little can be hoped for, if it has left any very considerable marks upon the body; but if, upon examination, no such marks can be discovered, we ought to conclude that a recovery is possible, and to take measures accordingly.

The moment a person is found in this state, cold water should be repeatedly thrown over the face and other parts of the body, drying it at intervals.

Electricity follows in this case, and should always be employed where it can, though the other means are not therefore to be neglected. If the body has lost any of its natural warmth, it will be proper to restore it by the application of heat to the skin; inflating the lungs will also contribute materially to the recovery.

The shocks employed, should at first be moderate and gradually increased in strength, as may be found necessary. The brain, spinal marrow, and heart, are the parts to which they ought chiefly to be applied, as being those primarily affected, and the renewal of whose functions is absolutely necessary to the restoration of life.

To assist those measures, some stimulant matter may be injected into the stomach by means of a syringe, or thrown into the intestines by way of glyster. Very little benefit, however, is to be expected from these, when electricity, duly applied, has failed of producing any sensible effect.

Smothering from Confinement under Bed-Clothes.

FROM inattention, and other causes, young children are frequently smothered in beds and cradles. When this happens, without their having been bruised by overlaying, &c the functions of life are suspended merely from the want of *vital air*. The vital organs are found to have sustained no particular injury; the lungs are collapsed, and the *right* cavity of the heart, and the large vessels belonging to it, are distended with blood.

If the body be hotter than is natural (which is often

the case), it should be exposed to a current of air, and sprinkled with cold water. The lungs should be immediately inflated, and the body afterwards treated as in the case of drowned persons.

Still-born Infants.

BLOW air into the mouth, through a small pipe or quill, till the breast be a little raised; then gently press the chest, and repeat the process for some time.—Gently rub the body, and foment the breast, &c. with diluted spirits.

Fainting Fits.

THESE appear to arise from the energy of the brain being suddenly suspended, in consequence of which the heart immediately ceases to beat, and the person falls down deprived of sense and motion.

When the powers of life have not been previously exhausted by disease, fatigue, or want of food, a recovery generally takes place after a short interval, and often without any thing being done. But should this not be the case, the feet and legs may be immersed in warm water, and the nostrils stimulated by applying spirit of hartshorn to them. If these fail, inflation of the lungs, and the other means already enumerated under the article *Drowning*, should be had recourse to.

It is still a very common practice to open a vein in such cases; but besides that fainting generally occurs in persons who are ill able to bear the loss of any blood, the measure appears in itself nowise suited to promote recovery, but rather the contrary, and is now very properly going into disuse.

The faintings which chiefly require assistance, and to which therefore, the attention of the public should be more

particularly directed, are those that take place from loss of blood, violent and long continued fits of coughing, excessive vomiting or purging, great fatigue, or want of food, and likewise after convulsions, and in the advanced stage of low fevers.

The remedies that may be employed for recovery in such cases, are either external, or internal. The external are, warm water, sharp mustard, spirit of hartshorn, or of *sal volatile*, *eau de luce*, and volatile ointment. Brandy, rum, or gin, may also be used externally, provided that care be taken to prevent their evaporating fast, and thus counteracting the good effects which their stimulating quality would otherwise produce: the parts to which these should be applied, as well as the best method of using them, have been already noticed. Putting the hands, feet, and legs, into warm water, or fomenting them and other parts with flannels wrung out of the same, are particularly serviceable in the faintings which happen in consequence of great loss of blood, excessive vomiting or purging, &c.; and the good effects of this remedy in such cases, does not depend so much upon the water stimulating by its warmth, as from a quantity of it being absorbed, and carried into the blood, where it supplies by its bulk the fluids that were lost, and gives to the vessels that degree of fulness which they require, in order to keep up the circulation.

As internal stimulants, (sometimes called cordials) from a gill to half a mutchkin of wine, warmed, and some sugar and nutmeg added to it,—three or four table spoonfuls of brandy or other spirit, diluted with two or three times the quantity of water,—or a gill of mint water, mixed with a tea spoonful of spirit of hartshorn, volatile aromatic spirit, *eau de luce*, æther, or Hoffman's anodyne liquor, may be introduced into the stomach by the flexible tube; and when that is not at hand, and the liquid cannot be got down the throat without it, a double quantity should be given by way of glyster.

Where excessive vomiting or purging has been the cause of the fainting fit, the return of these, and of the fainting, is best prevented by giving, according to the age of the patient, from ten to thirty drops of laudanum, in a glass of mint water, warm wine, or brandy and water,—or administering a double quantity in the form of glyster: but unless

in cases of great emergency, this should be left to some medical person.

Insensibility and Apparent Death from Intoxication.

FREQUENT dreadful examples have shewn that strong liquors, drank in large quantity, will suspend life. When persons are found in this situation, if their countenance be swollen, and of a dark red or purple colour, and these appearances do not go off upon keeping the body for a short time in an erect posture, it will be proper to take some blood from the jugular veins, or apply cupping-glasses to the neck.

When the pulse and breathing continue, and the body is hotter than natural, cloths dipt in cold water, and applied to the head, neck, stomach, and breast, have often been found serviceable in restoring intoxicated persons to their senses; and these applications will frequently render bleeding unnecessary.

But of all the remedies that have been tried in such cases, an emetic contributes most speedily to recovery; first, by emptying the stomach of a great part of the noxious fluid which the person had taken, and secondly, by producing a more equable distribution of the blood throughout the body, in consequence of the general agitation which the action of vomiting occasions. For this purpose, three or four table spoonfuls of ipecacuanha wine,—thirty or forty grains of ipecacuanha in powder,—or a couple of grains of emetic tartar, dissolved in half a gill of water, may be administered, and their operation promoted when it has begun, by plenty of luke-warm water. Should the person be incapable of swallowing, the emetic may be introduced into the stomach by means of a syringe.

If the emetic fails to operate, a mutchkin of luke-warm water, with two heaped table spoonfuls of common salt dissolved in it, should be given in glyster; and this has been known to empty the bowels, and procure speedy relief, after several other measures had been tried without effect. It will be necessary to repeat the emetic or glyster, if the first that was given has not produced the wished-for operation.

The best position for the body to be placed in, is, lying on one side, with the head and shoulders raised by pillows. —After the person is so far recovered as to be suffered to go to sleep, he should be carefully watched, lest his neck be anywise bent, or his head slip down under the clothes, or hang over the side of the bed. Care should also be taken, that nothing tight be allowed to remain about the neck.

If the hands and feet have become cold, they should be put into warm water, or wrapped in flannels well wrung out of the same, to be changed for others as they cool. And if necessary, bottles of hot water, or heated bricks, covered with flannel, may afterwards be applied to the feet, &c.

When the ordinary signs of life have disappeared, the same measures recommended for drowned persons, will be proper; observing, however, always to administer a brisk emetic, or sharp purgative glyster, as soon as the pulse and breathing are fully renewed.

*On the effects arising from exposure to Intense Cold,
and the treatment necessary for recovery.*

The general mildness of our climate, the influence of fashion, and the inconvenience of very warm clothing in many avocations of civilized life, are the principal reasons why the dress worn by the inhabitants of this country, is ill suited to protect them from the effects of severe cold. Thus circumstanced as to clothing, we may reckon it fortunate, that in the great and sudden variations of temperature, for which this climate is remarkable, the cold is seldom so intense as completely to destroy life by a short exposure to it, and that the opportunities of shelter and assistance are so numerous; as to render death from this cause, rather an unfrequent occurrence.

Where the circulation and breathing is suspended from exposure to cold, the same precautions are necessary; for the sudden restoration of warmth to the body in this case, occasions such a general disturbance in the vital functions

when they are renewed, as to prove almost instantly fatal. Instead, then, of carrying the body to the fire, or even into a warm room, it should at first be removed to an apartment without any fire. The clothes should be immediately taken off, and the whole body be well rubbed with snow, or washed in very cold water. When this has been continued for ten or fifteen minutes, we may begin the temperature of the body slowly, by using water made gradually warmer than the first, by repeated small additions of hot water to it.

In the mean time, the lungs should be diligently inflated in one or other of the methods already described, under the article on Drowning.

As soon as the circulation and breathing are restored, the patient should be laid between the blankets in bed, and particular care taken, not to give him any strong or hot liquors, as these will readily excite a feverish state, accompanied, perhaps, with inflammation of some internal part, which may prove fatal. Weak wine whey, with the cold just taken off, will, in general, be a very proper drink, as it will tend to bring on a gentle perspiration, and thereby serve to prevent the danger just mentioned.

If the person, previous to his exposure to the cold, has been exhausted from want of food, a small piece of bread, sopped in the yolk of an egg beaten up with a little milk and sugar, and a tea spoonful or two of brandy, or half a glass of wine, added to it,—should be given, and occasionally repeated until the patient's strength is so far recruited, as to admit of the cravings of appetite being gratified with safety.

But if (as often happens) intoxication has had a considerable share in the business, an emetic or purgative glyster, given as soon as the pulse and breathing are re-established, will often assist in restoring the senses, and recruiting the strength: the propriety of this measure, however, will depend so much upon the circumstances of the case, that we could wish it to be always referred where it can, to the judgment of a medical person.

Of the Treatment necessary in Cases of Poison.

Arsenic, corrosive sublimate, and opium, are the three articles whose poisonous effects will most frequently call for assistance.—Of these the arsenic is by far the most dangerous, as well from its sudden and violent operation in corroding the coats of the stomach, as from the difficulty of decomposing it, so as to destroy the activity of what has not been thrown up by vomiting. As soon, therefore, as a person is known to have swallowed arsenic, if vomiting has not already come on, he should take thirty or forty grains of ipecacuanha in powder, five or six table spoonfuls of ipecacuanha wine, or thirty grains of white vitriol dissolved in a little water, and also endeavour to excite vomiting by tickling the throat with a feather. In the mean time, he should drink plentifully of fat broth, or warm milk, or water mixed with salad oil, fresh butter, or lard, and repeat this as long as any sickness or retching continues; nor is it safe to abstain from drinking as long as there is reason to think that any of the arsenic remains behind. Violent pains in the bowels, succeeding the vomiting, give room to suspect that some of the arsenic has passed that way; in which case, a glyster composed of a pint or more of warm water, with two ounces of Epsom or Glauber's salt dissolved in it, should be administered without delay, and followed by repeated glysters of fat broth, or milk with oil, butter, or lard added to it.

When corrosive sublimate has been swallowed, the same means should be used as soon as possible, to evacuate it; but at the same time, half a tea spoonful of pearl or pot ashes dissolved in half a pint of warm water, should be given and repeated frequently, in order to render inert any portion of the poison which is not thrown up.—By these means, if used early, we shall seldom fail of preventing the fatal consequences which might otherwise have ensued from this poison.

In the case of opium or laudanum being taken in considerable quantity, vomiting should, if possible, be excited, by giving a brisk emetic; and if the power of swallowing be lost, the emetic should be thrown into the stomach by means of the flexible tube and funnel or syringe. But in the latter case, instead of using the white vitriol, we would recommend a table spoonful of antimonial wine, four or five of ipecacuanha wine, two or three grains of emetic tartar dissolved in half a gill of water, or thirty or forty grains of ipecacuanha in powder, to be employed; because these, though they should fail to produce vomiting, will serve to counteract the stupifying and noxious effect of the opium, by making it operate by sweating,—to promote which, the feet and legs should be bathed in hot water, or wrapped in flannels well wrung out of the same.

Spanish flies, if taken even in but small quantity, will readily bring on an inflammation of the stomach or bowels that may end in death. As we are not acquainted with any thing that, when taken into the stomach, can deprive these of their acrid quality, our attention should be directed to evacuate them as speedily as possible by vomiting, and afterwards make the person swallow a quantity of thick milk porridge, or something of the same kind, which will serve to envelope the flies that may still remain, and thereby protect the stomach and bowels from their acrimony.

Of Hydrophobia.

THE dreadful consequences of canine poison, the most common and dangerous animal poison known in this country, have of late been recorded to the public in several melancholy instances. The moment any person has been bit by a dog (whether mad or not) the wound should be dressed with salt and water, or a pickle made of vinegar and salt—the dog should not be killed till it is fully ascertained that it is mad. In which case, send immediately for medical aid, and till it arrives, excite a profuse sweat by friction with tepid oil,

which will serve to expel the poison or to destroy its activity.—Any medicine that may be afterwards taken, should be continued for at least forty days, during which time the patient should abstain from flesh and all salted and high-seasoned provisions. He must avoid strong liquors, and live mostly upon a light and rather spare diet.

Of Apoplexy, Symptoms, and Treatment.

WHEN attacked with this sudden disease, the patient is to all appearance dead, sense and motion are stopped, though, in general, the heart and lungs continue to move.—The usual forerunners of an apoplexy are, giddiness; pain and swimming of the head; loss of memory; drowsiness; noise in the ears; the night mare, and laborious respiration. When persons of an apoplectic make observe these symptoms, they have reason to dread the approach of a fit, and should endeavour to prevent it by bleeding, a slender diet, and opening medicines.—In cases of apoplexy, all that should be done, till medical aid arrives, is as follows:—Every method must be taken to lessen the force of the circulation towards the head, the patient should be kept perfectly easy and cool, his head to be raised pretty high, and his feet suffered to hang down; his clothes ought to be loosened, and fresh air admitted into his chamber; his garters should be tied pretty tight, by which means the motion of the blood from the lower extremities will be retarded.—All applications of spirits or other strong liquors must be avoided.—Volatile salts held to the nose, do mischief. Emetics must not be given.—If inclined to sweat, it may be promoted by pouring into the mouth a small quantity of wine whey.—In some cases, a plentiful sweat, kept up for a considerable time has carried off a serious apoplexy.

Of the Palsy.

OF all the affections called nervous, this is the most suddenly fatal, and is more or less dangerous, according to the importance of the parts affected; it is accompanied with a loss of sense or motion, or of both, in one or more parts of the body. The cause of palsy, is any thing that prevents the regular exertion of the nervous power upon any particular muscle, or part of the body.—The patient, if young, should be bled, blistered, and have purgative medicines administered, but if advanced in life, a contrary mode must be adopted, which the state of the patient will readily point out to the medical person who attends.—In a convalescent state, persons affected with palsy, should take as much exercise as their strength will permit; keeping themselves warm with flannels, &c. carefully avoiding every thing chilly or damp.

Of Convulsions and Epilepsy.

WHATEVER greatly irritates or stimulates the nerves may occasion convulsions; children are particularly liable to them, at the period of teething, small pox, measles, and with other eruptive diseases; sometimes also from external causes, such as strait clothes, bandages, &c. When they proceed from any of these, bathing the feet in warm water, and administering a mild clyster, will almost immediately relieve them.—In cases of epilepsy or falling sickness, medical aid should be instantly resorted to, as they differ so materially, that it is scarcely possible to give any general rules of conduct. Epileptic patients ought to take considerable exercise, avoid all extremes of heat and cold, all dangerous situations, as

standing upon precipices, riding deep waters, and such like, as they frequently bring on the fit.

Of the Colic.

NO disease of the bowels is attended with more excruciating pain than this. But there are so many kinds, and the treatment of each is so different, that in a work of this size, it is impossible to describe them, farther than giving a few cursory rules of conduct, by which, persons not in a situation to distinguish very accurately, may be of great service to sufferers in colics of every kind. Where you can ascertain that it has arisen from the indiscreet use of unripe fruits, meats of hard digestion, windy vegetables, fermenting liquors, and such like, the best medicine, on the first appearance of the symptoms, is a dram of brandy, gin, or any other good spirits, and warm flannels may be applied to the stomach, bowels, and feet of the patient. But when the disease cannot be ascribed to any of the preceding causes, or is exceedingly violent, send immediately for medical assistance, and till their arrival, bathe the feet and legs in warm water; apply bladders filled with warm water, or clothes wrung out of it to the stomach and bowels; make the patient drink freely of diluted liquors, and administer an emollient glyster every two or three hours. Should these not succeed, the patient ought to be immersed in warm water.

Proper Treatment for Burns.

WHEN an accident happens from burning, if severe, the patient should be immersed in a mixture of lime-water and oil, and that continued, till a medical person arrives.

If the burn is slight, and the skin not broke, by holding the part injured to the fire, and rubbing it with salt, the pain will subside: cloths dipped in spirits of wine or brandy, and applied to the burn, produce the same effects. But when the burn has penetrated so deep as to blister, or break the skin, take equal parts of Florence oil, or of fresh drawn linseed oil and lime-water; shake them well together in a wide-mouthed bottle, and anoint the parts affected, with this preparation, two or three times a-day; sometimes it is spread upon a cloth, and allowed to lie upon the burn.

Proper Treatment of Wounds.

WHEN a person has received a wound, examine whether any foreign body be lodged in it, such as metals, stones, splinters of wood, glass, lead, pieces of cloth, &c. these ought to be extracted, and the wound cleaned, before any dressing is applied. If deep, it must be filled with lint, or linen eaddis, laid on gently, and covered with a cloth dipped in oil; to be kept on by a proper bandage. When the bleeding is excessive it may be stopped by a garter fixed above the wound, if in any of the limbs. When this cannot be done, styptics, astringents, &c. must be applied.

Of Bruises, Sprains, &c.

WHEN bruised, the part affected should be bathed with warm vinegar, with a little rum or brandy added to it. The cloths applied to it should be kept constantly wet with this mixture. In more severe bruises, the patient should be immediately bled, the part washed with vinegar and water, and a poultice made, by boiling crumbs of bread, elder flowers, and cammomile flowers, in equal quantities of vinegar and

water. When a wound accompanies the bruise, this poultice is peculiarly proper, and may be changed two or three times a-day. In cases of sprains, the limb may be kept for a short time in cold water, with a garter, or some other bandage wrapt pretty tight about the sprained part; when taken out, a poultice may be applied, made of beer or vinegar and oatmeal. Opodeldock, camphire, &c. may be used with advantage.

On Accidents Incident to Children.

CHILDREN are not only lamed and maimed, but they often lose their lives by accidents, owing to the carelessness or inconsiderate neglect of nurses and mothers. A child should never be left alone in any situation, where he may be exposed to the destructive elements of fire and water.

We daily hear of children that have been burned to death, in consequence of their clothes having caught fire; yet, it is surprising, that the frequency of these afflicting events does not possess persons with an idea of the most effectual methods of extinguishing the fire. In general, an attempt is made to tear off the burning clothes from the sufferer, which should never be done. The clothing, instead of being torn off, ought to be pressed close to the body, and whatever is at hand wrapped over it, so as to exclude the air, when the blaze will go out. It is the action of the air that keeps it alive, and increases the vehemence. A carpet, a table cloth, a blanket, any close wrapper, will instantly extinguish it.

Semicircular irons, called *guards*, should be always fixed up round fire-places in nurseries, and in all apartments to which children have access.

The accidents from scalding, are still more numerous. Children are in continual danger where victuals are cooking; nothing hot should ever be left within a child's reach, otherwise he will very probably pull it over him; in which

case, before the clothes can be got off, he may be scalded to death. Children are also apt to carry every thing to the mouth; and a very small quantity of any liquid, boiling hot, will occasion death, if taken into the stomach.

Accidents by *cold* water, though not so frequent in early life, as those occasioned by fire, ought nevertheless, to be guarded against with due precaution. Wells, and pieces of water near houses, are frequently left open, or without any fence round them. All furniture in a nursery should be low, and tables to be made without corners. Particular care should also be taken that knives and all sharp instruments are placed beyond the reach of children. A few bars should be always fixed across the windows of apartments in which children are suffered to play about. It is too customary for parents and nurses to take infants into bed with them; they should always lie in a cradle: for it is not an uncommon thing, to hear of a child's being smothered by the accidental rolling, or pressure of a grown person during sleep. Turn-up-bedsteads are noxious and dangerous, they exclude the air from the bed-clothes all day, and render them frowsy and unwholesome, and children are often inadvertently killed in them. At least half the accidents that befall children, both within doors and without, are owing to the folly and cruelty of leaving one child to the care of another, who, though a little older, is not less in want of a mother's or a nurse's vigilance. For part of the preceding remarks we are indebted to an admirable work of the late Dr. BUCHAN'S, entitled, "*An Address to Mothers.*"

Of Contagion.

UNDER this head, may be comprised not only the plague, but the small pox, the measles, and other malignant diseases of the contagious kind, which are communicated by contact, or effluvia alone emanating from the sick. As the sphere of contagion, under all these forms, appears from many circumstances, to be confined to the sick room, and to extend but a few paces beyond its source, it seems surprising,

after the experience of so many ages, that so little has been accomplished towards arresting its career, or preventing its propagation; for, notwithstanding the ordinary means which have hitherto been employed, these fatal maladies have generally run their course, until the contagious principle has been exhausted. Frequently through inattention, however, a remnant of the subtle poison is suffered to remain in houses and ships, attaching itself to furniture, vestments, or other surrounding bodies, and *lying dormant* till a peculiar state of the atmosphere renews its activity, and recalls it into action. Hence it is, that the various modes by which it is conveyed far and wide in a city, and in families, often elude human investigation.

Under wise and salutary regulations, directed by the Faculty, there is reason to hope, that the fatal class of contagious fevers may, at no very distant period, be greatly diminished, if not wholly exterminated. To accomplish this important purpose, the following particulars ought to be carefully attended to.

On the first appearance of the malignant fever, every person should refrain from communication with the infected house, but the physicians and necessary attendants.

Under their inspection, the house, bed, clothes, and furniture, ought to undergo a thorough purification, by the penetrating fumes of the nitrous or marine acid, evolved from nitre or common salt, by pouring thereon sulphuric acid over a gentle heat, and by conveying the fumes to every part of the room and furniture; or, what seems preferable, the vapour of the oxygenated marine acid, conveyed through a proper tube, in which way it has been employed with signal success in America, and in the fever hospitals in this country. But, as the doors and windows require to be kept shut, this process demands caution, otherwise the pungent fumes may prove injurious to weak lungs.

Nurses and attendants ought by no means to go abroad, until they have previously used a tepid bath, and their beds and wearing apparel undergone a complete purification, Healthy persons, on meeting one infected, or on going into unpurified houses, have caught the infection, and died. For as the poison adheres to vestments a longer time than is commonly imagined, and is probably the most frequent, though unsuspected mode of spreading the contagion, friends

and others ought to be extremely circumspect in visiting the sick, always to change their apparel before they again mix with society.

As the medical faculty, nurses, and attendants on the sick are more particularly exposed to the contagion, a bottle of olive oil should be placed in the infected room, that physicians and visitors on entering the chamber or approaching the patient, might take a tea spoonful or two, or at least guard their mouth and nostrils with a few drops of it.

Olive oil is said to resist the plague, which, according to the ablest nosologists, is a typhus fever of the highest degree of malignity and contagion; why may it not be reasonably presumed sufficiently powerful to counteract the yellow fever, which, from its entire history, evidently appears to differ from the real plague only in degree, not in essence?

When a pestilential fever first breaks out, and threatens to become prevalent in a certain district, the neighbouring families ought to retire in time to a healthy situation in the country; and to guard still more effectually from the contagion, ought to observe (as far as their leisure and respective occupations will permit) the following precautions; for "Prevention is easier, and better than Cure."

1. Strict temperance ought to be uniformly preserved, particularly in the use of animal food; avoiding all damaged provisions, fruits, or vegetables, or those which pass through the hands of nurses, or other suspected persons. Also high-seasoned fruits, ardent spirits, and heating cordials; using as common beverage, brisk cider, perry, spruce, beer, lemonade, or pure water.

2. Regular exercise ought to be taken every morning and evening, avoiding however, the night air, using frequently general or partial bathings with cold water; with every other attention to cleanliness.

3. Above all, let timorous persons strive to banish fear and anxiety, and, if possible, all the depressing passions, to cherish, on the other hand, an habitual cheerfulness and serenity, which, together with hope, constitute the balm of life.

In all cases of infectious diseases, the preceding remarks will, in some degree be found useful; particularly acid fumigation, for the apartments of the sick, for the preparation

of which, the medical gentlemen who attend, will give the proper directions

Cautions against Premature Interment.

" Death may usurp on Nature many hours,
" And yet the powers of life kindle again
" The o'er-prest spirits."

" SHAKESPEAR."

Having pointed out the most approved means hitherto discovered of counteracting contagion in infected houses, ships, or prisons; of guarding against the inroads of this insidious poison, or of expelling it on its first entrance into the human system; it will doubtless be asked, how is a person to judge of his being infected? We need only to remark, that this may be generally known during the prevalence of an epidemic or endemic malignant fever by a sudden fit of chillness, accompanied with nausea, languor, loss of strength, head-ache, or flying pains, &c. when not a moment should be lost in arresting its progress; otherwise the fever, once formed, will be apt to baffle ordinary means.

The morbid exhalations from the sick in malignant fevers, while living, are in reality more dangerous than those which emanate from the dead; and the family and attendants daily run a greater risk of receiving the contagion before, than after the patient's decease.

Before we dismiss the subject, it may not be improper to offer a few seasonable admonitions against those hasty burials which in some countries custom has long sanctioned, though in opposition to reason and decency.

That in cases of malignant fevers, putrescency advances more speedily, cannot be denied; and that under such circumstances the time of funeral ought not to be unnecessarily protracted, we readily admit; but what are we to say, when in the more northern climates, and in temperate or even cool

weather, we find the same rash practice equally prevails, not only among aged worn-out constitutions, but in young persons in the bloom of health and vigour, who, on being struck down by an illness of only a few days, or even hours, are nevertheless consigned to the same summary sentence, because custom has ordained it? No sooner has breathing apparently ceased, and the visage assumed a ghastly or death-like look, than the patient, after his eyes are closed, is hurried into a coffin, and the body, scarcely yet cold, is precipitated into the grave! So extremely fallacious are the signs of death, that too often, has the semblance been mistaken for reality; especially after sudden accidents, or short illness. Many of these, however, by prompt means and judicious treatment, have been happily restored.

That certain unfortunate beings, have been, prematurely interred, some very affecting instances might be produced; but we forbear to revive the sad remembrance. To prevent in future a repetition of such horrible events, at the very idea of which our nature revolts and humanity shudders, is the object of the present remarks.

When youth and beauty in the prime of life are suddenly stunned as it were, by a malignant fever, the powers of the system are sometimes oppressed, vitality overwhelmed, and the pulse rendered imperceptible, while a death-like aspect overspreads the countenance. Can these, without farther enquiry, even in the hottest climate, justify the common usage, of immediately precipitating the funeral process? May not a small spark of life yet remain? Who then is left to decide between life and death?

Dr. Buchan in his last publication, "Advice to Mothers," relates the remarkable case of Miss Wilson, who lay in a state of apparent death 11 days, the muscles remaining rigid, and the body seemingly lifeless; she would then have been buried, had he not positively forbidden her mother, whatever might happen, to have her interred till he had given his assent. At the time of this last attack, he was upon a journey to a distant part of the country.

"On his return, being told that she was dead, but that her burial had been delayed till he had seen her, he immediately called, and found her to all appearance what the people had described her—a lifeless corpse. On examination of the body, however, he thought he perceived some

degree of warmth remained about the region of the heart, and which confirmed him in his previous design of making every attempt to restore animation. It was a considerable time before any signs of life appeared; at length the girl became convulsed, set up her old cry, and threw about her arms as usual. Her health gradually returned." The narrow escape which this and many other persons have experienced, ought to impress the public with redoubled caution against premature interment.

"Unequivocal proofs of death should always be waited for, and every possible means of resuscitation persevered in, when we consider how appearances may be deceitful, and how unexpectedly the latent sparks of life may be rekindled."

The following method was the means of restoring to her friends, a lady who had been apparently dead for some time:—

Rub a wine glass with flannel before a fire, and immediately apply it to the mouth of the person supposed dead, when if any of the vital principles remain, symptoms of moisture will possibly appear in a short time on the glass.

"If we for a moment contemplate the dreadful situation of a human being, *not really dead*, hurried to the grave, and thus rashly precipitated into the arms of death; can we too highly appreciate the acquisition of that, *which deliver us from the fear of experiencing a similar catastrophe, a fear, which surpasses even the fear of death itself?*—The preservation of the lives of our fellow-creatures is a primary duty, enjoined to us by the concurring dictates of reason, religion, and humanity."

PUBLIC CAUTIONS, HINTS, &c.

AGREEABLY to the design of communicating *popular* instruction upon the different objects embraced by this tract, the following cautions, &c. are inserted here, in hopes that they will be read and attended to, by persons who might otherwise have continued uninformed with regard to the dangers which they are able to guard against.

To prevent the Effects of Lightning.

WHEN persons happen to be overtaken by a thunder-storm, although they may not be terrified by the lightning, yet they naturally wish for shelter from the rain which usually attends it, and, therefore, if no house be at hand, generally take refuge under the nearest tree they can find. But in doing this, they unknowingly expose themselves to a double danger, first, because their clothes being thus kept dry, their bodies are rendered more liable to injury,—the lightning often passing harmless over a body whose surface is wet; and secondly, because a tree, or any elevated object, instead of warding off, serves to attract and conduct the lightning, which, in its passage to the ground, frequently rends the trunk or branches, and kills any person or animal who happens to be close to it at the time. Instead of seeking protection, then, by retiring under the shelter of a tree, hay-rick, pillar, wall, or hedge, the person should either pursue his way to the nearest house, or get to a part of the road or field which has no high object that can draw the lightning towards it, and remain there until the storm has subsided.—It is particularly dangerous to stand near leaden spouts, iron gates, or pallsadoes, at such times; metals of all kinds having so strong an attraction for lightning, as frequently to draw it out of the course which it would otherwise have taken.

When in the house, avoid sitting, or standing, near the window, door, or walls, during a thunder-gust. The nearer you are placed to the middle of a room, the better.

The greatest danger to be apprehended from lightning, is explosion of powder-magazines, which might in a great degree be secured from danger, by *insulation*; or by lining the bulk, heads, and floorings, with materials of a non-conducting nature, the expence of which would not be great,

*The dangerous Effects of Noxious Vapours, from
Wells, Cellars, Fermenting Liquors, &c.
may be prevented*

By procuring a free circulation of air, either by ventilators, or opening the doors or windows, where it is confined, or by changing the air, by keeping fires in the infected place, or by throwing in stone-lime recently powdered.

Old wells, vaults, and sewers, which have been long shut up from the air, are generally occupied by vapours which soon prove fatal to persons breathing them. The property which these vapours have, of extinguishing flame, affords the means of detecting their presence, and thereby avoiding the danger which might ensue from an incautious exposure to them. When such places, therefore, are opened to be cleaned out or repaired, a lighted candle should be let down slowly by means of a cord, before any person is suffered to descend; and if it be found to burn freely until it gets to the surface of the water or other matter covering the bottom, the workmen may then venture down with safety. But if, without any accident, the candle gets extinguished in its descent, and continues to be so on repeated trials, we may be assured that the air of the place is highly noxious. In that case, if the well, &c. cannot be left open to the air for a sufficient length of time to purify it, some means should be employed to expel the noxious vapour.

Persons whose business requires them to attend upon large quantities of fermenting liquors, or to work in close places with lighted charcoal, frequently experience head-ach, giddiness, and other disagreeable effects from the noxious vapours which these exhale, and often have their health impaired, or their lives endangered by a continuance in the employment. In some cases, the danger, perhaps, cannot be avoided, except by going into the open air as soon as head-ach or giddiness begins, and drinking a glass of cold water, or washing the face and neck with the same. In the case of persons whose work requires charcoal fire, the dangerous effects of it may be prevented, by taking care not to sit near it when burning, to burn it in a chimney, and

when there is no chimney, to keep the door open, and to place a large tub of water in the room.

On Bathing, Skating, &c.

IN the act of drowning, it often happens, that he who hastens to rescue his companion, loses his own life — To prevent this, the assistant should make a running noose on a handkerchief, cravat, or garter; then, with caution, approach his struggling companion, and instantly pass the noose over a hand or foot, and thus draw him with safety on shore.

It has been found that the bodies of persons drowned in small rivers or ponds, are much sooner discovered and taken out by means of rakes, or of hooks fixed on long poles, than by the drags, which are best calculated for those places where the water is deep and broad, and where boats can be had to make use of them. As the gaining even of a few minutes in such cases, is often of the utmost importance, it is recommended to the inhabitants of those places which have rivers or ponds in their neighbourhood, to be provided with several instruments of the form and size of a *muck-drag*, but with the tines or prongs rather more bent down. These instruments are to be fitted on light poles of ten or twelve feet in length: and to prevent the body receiving any injury from them, each tine or prong should be guarded by a small plate of iron, shaped like the segment of a circle, and welded on about half an inch from the point, in the same way that is now done with the drags. — On an emergency, an instrument like what we have described, may be easily made, by heating the prongs of a common pitching fork, then bending them down at the place where they divide, to about a right angle with the shaft.

It will sometimes happen, that the body cannot be reached by these instruments, and no boat be at hand to use the drags in the ordinary way. In such case, we would recommend, that the drag be made fast to the middle of a long rope, which is to be stretched across the river or pond,

and by means of it, the drag pulled from bank to bank, in a zig-zag direction, so as to leave no part of the water unsearched.

Where deep ponds or rivers that are frozen over in winter, are much resorted to for the purpose of skating, &c. long ropes, fir planks, and several poles furnished in the manner described above; should be lodged in some house near the place, so that they may be speedily got at when wanted.—When the ice gives way under a person, even though he do not sink beneath it, it is scarcely possible that he should get out unassisted, unless the water happens to be very shallow. A plank should therefore be placed close to the edge of the opening, in the ice, and upon this one or two persons may generally stand pretty securely to help the other out. But if the ice be so weak as to render this method hazardous, a plank or pole ought to be shoved to the person to support himself upon. In the mean time, the end of a long rope should be carried round the place, by a light boy on skates, so that the person may become enclosed in its bight or doubling, and by shifting it under his arms, or between his legs, give a secure hold whereby he can be drawn out.

When the person has unfortunately got away from the place where he fell in, and it becomes necessary to search after him with the hook mentioned above, or to break the ice, in order to recover the body, several long planks, or a large door, should be laid down, for those to stand upon who are employed in this; for even thin ice will support a very considerable weight, provided it be made to bear upon a large surface.

All persons who have wells in their *gardens*, &c. must be aware of the absolute necessity of securing them by *suitable coverings*.

To prevent the Effects of Excessive Cold.

PERSONS are in danger of being destroyed by it, when they become very drowsy, or are affected with general numbness or insensibility of the body. As the cold which proves

fatal generally affects the feet first, great care should be taken to keep them as warm as possible.

1. By protecting them, when you are exposed to cold, with wool, or woollen socks, within the shoes or boots, or with large woollen stockings drawn over them; or, when you ride, with hay or straw wrapped round them.

2. By keeping up a brisk circulation in the blood vessels of the feet, which will be the best preserved by avoiding tight boots or shoes, by *moving the feet constantly*. Or when this is impracticable, from a confined situation, and two or more persons are exposed together,

3. By placing their feet, *without shoes*, against each other's breasts.

If, notwithstanding these precautions, a person should be rendered sleepy or insensible by cold, he must exert himself; and move about quickly; for, if he should sleep in the cold, he will inevitably perish.

The person thus affected should be kept from the fire; for acrid applications of every kind are very injurious.

To prevent the Effects of drinking Cold Water, or Cold Liquors of any Kind, in Warm Weather.

1. AVOID drinking whilst you are warm.

2. Drink only a small quantity at once, and let it remain a short time in your mouth before you swallow it.

3. Wash your hands and face, and rinse your mouth with cold water before you drink. If these precautions have been neglected, and the disorder incident to drinking cold water hath been produced, the first, and in most instances the only, remedy to be administered, is sixty drops of liquid laudauum in spirit and water, or warm drink of any kind.

If this should fail of giving relief, the same quantity may be given twenty minutes afterwards.

When laudanum cannot be obtained, rum and water, or warm water, should be given. Vomits and bleeding should not be used without consulting a physician.

Fire.

MANY melancholy disasters happen from the head-dresses of ladies catching fire, by reading or working when half asleep. Also by children being left alone by a fire, especially if it be green wood.

1. Flimsy dress of females catches flame from the slightest spark. The moment this happens, they fly from room to room, and fan the flame. *They ought to recollect*, that in order to *extinguish it*, it is necessary to *exclude the external air*; for, without air, no substance, however inflammable, can burn a single moment.

2. Should a spark seize their caps, apply both hands instantly, which becomes at once the extinguisher; but when the flame has made advances, the attendants, if any, must instantly cover the part with the hearth-rug, or wrap the body close in the carpet, till a servant can arrive with water, which must be poured on in abundance.

3. The inflammability of muslin dresses may be prevented by rinsing them out in *alum water*, made by dissolving the proportion of an egg, or even less, in a quart of water. By this simple means, *all danger will be prevented*.

4. Fire guards made of wire, &c. should be in every nursery, dressing room, &c.

Loaded Guns.

DREADFUL catastrophes have too often occurred within the last year, by the extreme inattention of persons leaving guns in the way of boys, &c. to be handled improperly and incautiously.—It is therefore most impressively and earnestly recommended, that, in future, all charges may be drawn before such pieces are deposited, or that they should be disposed of, so as to prevent the possibility of their being at hand, or in the way of thoughtless inexperienced young persons.

Sudden Death.

When sudden death happens on the street, the nearest door should be immediately opened for the reception of the body. In all cases, interment should be deferred till signs of putrefaction appear, but especially in those when no *graduation of disease* has preceded, as in cases of hysterics, apoplexies, external injuries, drowning, suffocation, and the like.

The effects of sound upon animal life is astonishing. The beat of a drum may have a very beneficial effect upon persons in the state of suspended animation. At one time, a scream, extorted by grief, proved the means of resuscitating a person who was supposed to be dead, and who had exhibited the usual recent marks of the extinction of life.

Oil should be applied as a remedy against all animal poisons, particularly to that of the bee, the wasp, the hornet, and the viper.

Persons, in the smallest degree intoxicated, are recommended to apply cold water, spirit of wine, or æther, to the head and temples.

In cases of spitting of blood, emetics of ipccacuanha may be administered (occasionally) with great advantage, as they close the open vessels of the lungs sooner and more effectually, than any other remedy.

Peruvian bark should be administered to persons in the convalescent state, after all kinds of fevers, or debility, and also in painful periodical complaints, such as headaches, hysterical, rheumatic, and gouty affections, in the diseases of dropsy, scurvy, scrofula, and rickets, and in every species of ulcers, as it produces good matter, and brings on a healing disposition.

Caution respecting Ointments.

Ointments of a pernicious quality have been often very incautiously applied to the sore nipples of women giving suck, in consequence of which, infants at the breast have taken in some of it, and been destroyed.

The attention of humane and ingenious persons is requested to the following hints, for the invention of machines, &c. for the Preservation of Human Life.

1. On machines and Inventions to preserve mankind from the dangers of fire.
2. To prevent the danger arising from powder-mills and powder-magazines.
3. Machines and Inventions for preservation from danger by restive horses in carriages.
4. Inventions to secure horsemen from the danger of being suspended in the stirrup.
5. Inventions to prevent danger from the breaking down of carriages.
6. Machines and Inventions for preventing the fatal effects produced by noxious vapours.
7. Inventions to prevent the bad effects of exhalations arising from gilding with quicksilver.
8. Inventions to secure preparers of colours from the diseases to which they are liable.
9. Inventions to prevent injury to the health of the carders of cotton.
10. Machines for removing the danger of drowning in mines.
11. Machines and inventions to preserve mankind from drowning.
12. Machines for the recovery of the apparently dead.
13. Machines for preventing the danger to which infants are exposed from being overlaid or suffocated in beds.
14. Inventions and prudent cautions to prevent the danger of fire arms going off involuntarily, or bursting.
15. Inventions to prevent danger from cranes.
16. Machines, &c. to alarm and detect house-breakers.
17. On the best substitutes for the anchor, rudder, &c. of ships.
18. Signals of distress at sea.
19. Methods of preventing danger when bewildered on heaths, &c.

Preservation of the Lives of Seamen.

The moment an alarm is given that a man is overboard, the ship's helm should be put down, and she should be hove in stays; an object that can float should also be thrown overboard as near the man as possible, and carefully kept sight of, as it will prove a *beacon*, towards which the boat should pull as soon as lowered down. A grand primary object is having a boat ready to lower down at a moment's notice, which should be hoisted up at the stern most convenient; the lashings, falls, and tackle, to be ever kept clear, and a rudder, tiller, and spare oar, ever to be kept in her, and when dark she should by no means go without a lantern and a compass. There should also be kept in her a rope with a running bowline, ready to fix in or throw to the person in danger, coils of small rope, with running bowlines, should also be kept in the chains, quarters, and abaft, ready to throw over, as it most generally occurs that men pass close to the ship's side, and have been often miraculously saved by clinging to ropes. Sailors have no conception, that *mephitic air* will be productive of immediate apparent death. It is granted by seamen, that smoking or fumigating ships with charcoal is the most effectual means of killing all kinds of vermin, and is therefore always resorted to.

It is recommended for the certain preservation of our brave defenders, that no sailor, nor boys, be allowed to go under the decks, until the *hatches*, and all the other *openings*, have been for three hours uncovered; in that time all *noxious vapours* will be effectually detached.

Life Boat.

Every sea port town should be provided with a Life Boat, of which the following account, as given by Mr. Greathead, the inventor, will prove the most useful and satisfactory:

Mr. Greathead stated, before a Committee of the House of Commons, that he had conceived the principle of the invention of the Life Boat, from the properties of a spheroid, which “if divided into quarters, each quarter is elliptical, and nearly resembles the half of a wooden bowl, having a curvature with projecting ends: this, thrown into the sea, or broken water, cannot be upset, nor lie with the bottom upwards.”—This illustration was confirmed by Mr. Hinderwell, ship owner, Scarborough, who observed, that—“The peculiar nature of the curvature of the keel of the Life Boat, is the foundation and basis of its excellence: it regulates, in a great measure, the shear with the elevation towards the ends. This construction spreads and repels the water in every direction, and enables the boat to ascend and descend with great facility over the breakers. The ends being reduced regularly from the centre to less than one-third proportion of the midships, both ends are lighter than the body section. By means of the curved keel, and the centre of gravity being placed in the centre of the boat, she preserves equilibrium in the midst of the breakers.—The internal shallowness of the boat in the body section, occasioned by the convexity of the keel, and the shear at the top, leaves so small a space for the water to occupy, that the boat, though filled with water, is in no danger of sinking or upsetting. The buoyancy of the boat, when filled with water, is also assisted by cork being placed above the water line.”

Winter, a season terrible for disasters at sea, should deeply impress every feeling mind with the necessity of extending our liberality to the preservation of that brave and meritorious race of men, to whom all must feel themselves greatly indebted, not only for their wealth and prosperity, but for their security, comfort, and happiness.

Swimming.

A knowledge of the art of swimming may (independently of the power it gives the possessor of saving his own life) be productive of the greatest good to his neighbour.

The person must walk into water so deep that it will

reach to the breast. He is then to lie down gently on the belly, keeping the head and neck perfectly upright, the breast advancing forward, the thorax inflated, and the back bent; then withdrawing the legs from the bottom, and stretching them out, strike the arms forwards in unison with the legs.—*Swimming on the back* is somewhat similar to that on the belly; but with this difference, that although the legs are employed to move the body forwards, the arms are generally unemployed, and the *progressive motion* is derived from the movement of the legs.—In diving, a person must close his hands together, and, pressing his chin upon his breast, make an exertion to bend with force forwards.—While in that position, he must continue to move with rapidity under the surface; and whenever he chooses to return to his former situation, he has nothing to do but *bend back his head*, and he will immediately return to the surface.

It is very common for novices in the art to make use of *corks* or *bladders* to assist in keeping the body above water. Some have utterly condemned the use of these: however, Dr. Franklin allows that they may be of service *for supporting the body*, while men and children are learning what is called the stroke, or that manner of drawing in and striking out the hands and feet that is necessary to produce progressive motion.

Vaccination.

It is a duty every person owes to his family and society, to have his children inoculated with the cow-pox, the virtues of which are now so generally known, and have been sanctioned by the first medical circles in the world; also by the adoption of it over the Continents of Europe and America, in the Russian and Turkish empires, and in our possessions in Asia and the West Indies; by the patronage of his Majesty, of his family, and of the first nobility in the united kingdoms; by the British Parliament, which has rewarded the discoverer;—by its never proving fatal, attended with no danger of contagion, loss of time or expence, as precaution is unnecessary, and medicine is not required, the eruption being on the inoculated part only.

The Emperor Alexander of Russia.

THE following extraordinary instances of resuscitation, accomplished by the magnanimous Alexander, Emperor of Russia, are the best precepts the preparer of this work could select for illustrating and enforcing its objects. They were communicated by Dr. Hawes, the Founder, and present Treasurer of the Royal Humane Society, an institution, which does honour to our country, and to human nature.

The usual walk of the Emperor of Russia is on the banks of the Neva, upon the least frequented parts of which he is frequently seen, in a very contemplative, and sometimes in a very melancholy mood.—In one of his walks lately, a boatman happened to fall into the river, and after being some time in the water, he was taken out, through the exertion of his companion in the boat, and carried ashore.—Alexander hastened to the spot where the man was landed, and assisted in stripping him, and employed the process detailed in the former part of this work with success.—On the man being restored to life, the philanthropic Alexander gave him a sum of money; and upon his companion, his Majesty settled a pension for life, as a reward for his benevolence.

*Copy of a Letter from JAMES GRANGE, Esq.
to Dr. HAWES.*

March 24, 1806.

DEAR SIR,

HIS Imperial Majesty the Emperor Alexander, in one of his journeys through Poland, solely by his own perseverance and personal exertion, restored to life a peasant of that coun-

try, who had been drowned a considerable time. This very interesting occurrence came to my knowledge during my late stay at St. Petersburg, and took place between Kovna and Wilna (in Lithuania) on the banks of the little river Wilia, from whence the last mentioned town derives its name.

The emperor, from some cause or other immaterial to the present subject, had considerably advanced his attendants; and, being led by the winding of the road within a short distance of the above mentioned river, and perceiving several persons assembled near the edge of the water, out of which they appeared to be dragging something, he instantly alighted, and, on approaching the spot, found it to be the body of a man apparently lifeless. Prompted by humanity alone, and without any other assistance than that of the ignorant boors around him, to whom he was no otherwise known than that his uniform indicated an officer of rank, he had him conveyed to, and laid on the side of a bank, and immediately proceeded with his own hands to assist in taking off the wet clothes of the apparent corpse, and to rub his temples, wrists, &c. which his Imperial Majesty continued for a considerable time, using every other means, though destitute of every medical assistance, that appeared at the moment most likely to restore animation, but all without effect.

In the midst of this occupation, the Emperor was joined by the gentlemen of his suite, among whom were the Prince Wolkousky and Count Liewen (two Russian-noblemen) and Dr. Weilly, his Majesty's Head Surgeon, an *English Gentleman*, whose professional abilities are so well known (at least on the continent) that they need no comment; which latter always travels with, and indeed never quits his Majesty at any time.

Their exertions were immediately added to those of the Emperor; and on the Doctor's attempting to bleed the patient, his Majesty held and rubbed his arm, and gave every other assistance in his power; that, however, and all other means they could devise, proved equally ineffectual; so much so, that after *above three hours* fruitless attempts to recover him, the Doctor declared, to the extreme chagrin of the Emperor (who was by this time become very anxious about it) to be his opinion, that life was quite gone, and that it was useless to proceed any further.

Fatigued as he was with such continued exertion, the Emperor could not, however rest satisfied, without entreating Weilly to persevere, and make a fresh attempt to bleed him.—The doctor, although (as he has declared to me himself, and from whose own mouth I have these particulars) he had not the slightest hope of being more successful in this than in former ones, proceeded, nevertheless, to obey the positive injunction of his Imperial Majesty; when, the whole of them (the noblemen, &c.) making a last effort in rubbing, &c. the Emperor had, at length, *the inexpressible satisfaction* of seeing the blood make its appearance, accompanied by a slight groan.

The emotions of his Imperial Majesty on this occasion, the doctor informed me, are not to be described, and, in the plenitude of his joy, he exclaimed,

“ *Good God, this is the brightest day of my life!*” and the tears, which instantaneously sprang into his eyes, indicated that these words came from the heart.

It is useless to say, *my dear Sir*, that their exertions were, as you may suppose, redoubled, and finally crowned with complete success; but I must not forget to add (as, in justice to His Imperial Majesty, no trait, however trifling, ought to be omitted, which reflects such honour on his feelings as a man), that on Dr. Weilly’s looking about for something to stop the blood with, and tie up his arm, the Emperor, without any hesitation, instantly took out his handkerchief, tore it in pieces, and with his own hands bound the poor fellow’s arm with it (whose gratitude and astonishment, when informed to whom he was indebted for his life, you may easily conceive); and remained with him till he saw him quite recovered, and conveyed to a place where proper care would be taken of him; besides ordering him a considerable present of money, and having since otherwise provided for him and his family.

The accompanying snuff-box, on which this interesting event is faithfully, though roughly delineated (the poor inhabitants of that part of Poland being no great artists) was sketched at a neighbouring town, for the purpose of commemorating his restoration; and is one of *four* presented, on the occasion, to the principal actors in it, namely, His Imperial Majesty, and the *three gentl men* above mentioned, who are (though not very correctly, it is true, represented on it.

Knowing my attachment to every thing in the least connected with that truly amiable and good Prince, or his actions, Dr. Weilly was kind enough, at my request, to present me with it; and although I would not part with it on any other account, I think it cannot be better disposed of, than by taking the liberty of offering it to you, Sir, to the end, that so striking an example of humanity, perseverance, and philanthropy, *in so exalted a character*, may not be entirely lost to the world, and to posterity.

Requesting you to excuse the hasty, imperfect way in which I have endeavoured to narrate this very affecting transaction (to which I feel myself totally incompetent to do adequate justice) allow me to assure you, Sir, of the sentiments of respect and esteem with which I beg leave to subscribe myself, dear Sir,

Your's most faithfully,

JAMES GRANGE.

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